Portfolio Standards and the Supply of Renewable Energy in New England

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Electricity Restructuring Roundtable
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RPS Created by Electric Industry Restructuring

- MA: 1997 Electric Utility Restructuring Act
- Recognizes the benefits of expanded use of renewable energy
  - Increases fuel diversity for electric generation
  - Increases low emission generation capacity
- Recognizes the need to provide subsidies to stimulate renewable energy development
- Uses market forces to expand renewable energy use at the lowest possible cost
  - Mandate increasing demand levels, encourage supply to respond

First Years of the MA RPS Program

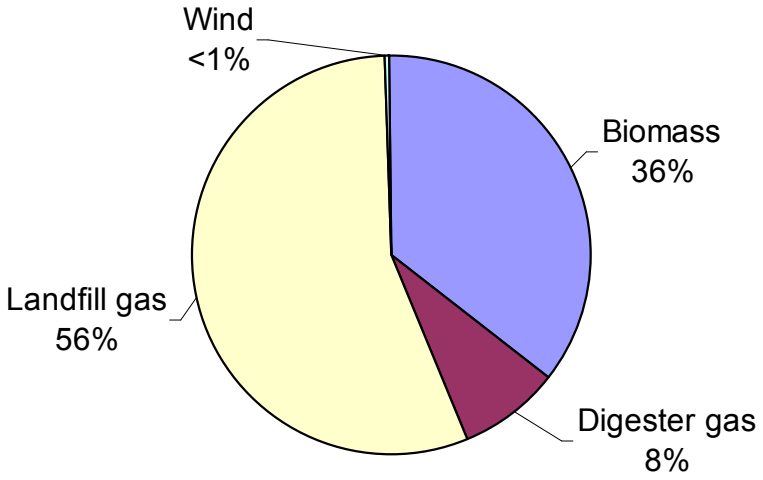
- **2002: Early Compliance Year**
  - RPS RECs banked for 2003 Compliance
- **2003: First Year of Compliance**
  - Filings received by July 2004
  - DOER issued compliance report Feb 2005
- **2004: Second Year of Compliance**
  - Compliance Filings due July 2005

2003 RPS Compliance in MA

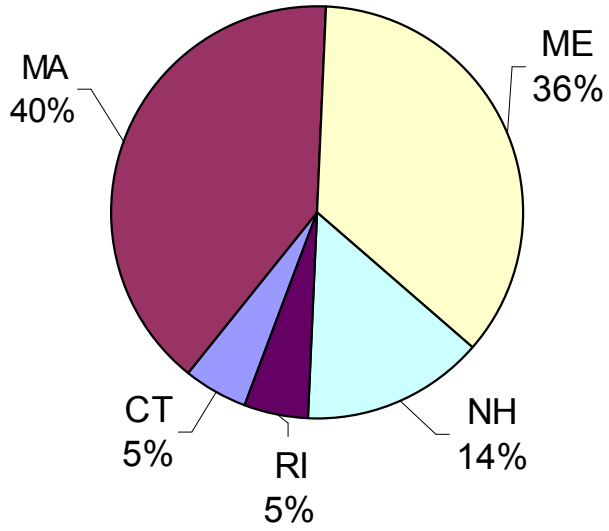
	MWh
MA Total Retail Sales	**49,834,324**
RPS Standard (1% of total retail sales)	**498,344**
RPS Certificates from 2003 New Renewable Generation	**304,112**
RPS Certificates from 2002 Early Compliance	**255,069**
Alternative Compliance Payments	**181**
Total Certificates Reported for Compliance	**559,362**
Total Banked Certificates for 2004/2005 Compliance	**60,353**

2003 RPS Compliance:
Generation Type and Location

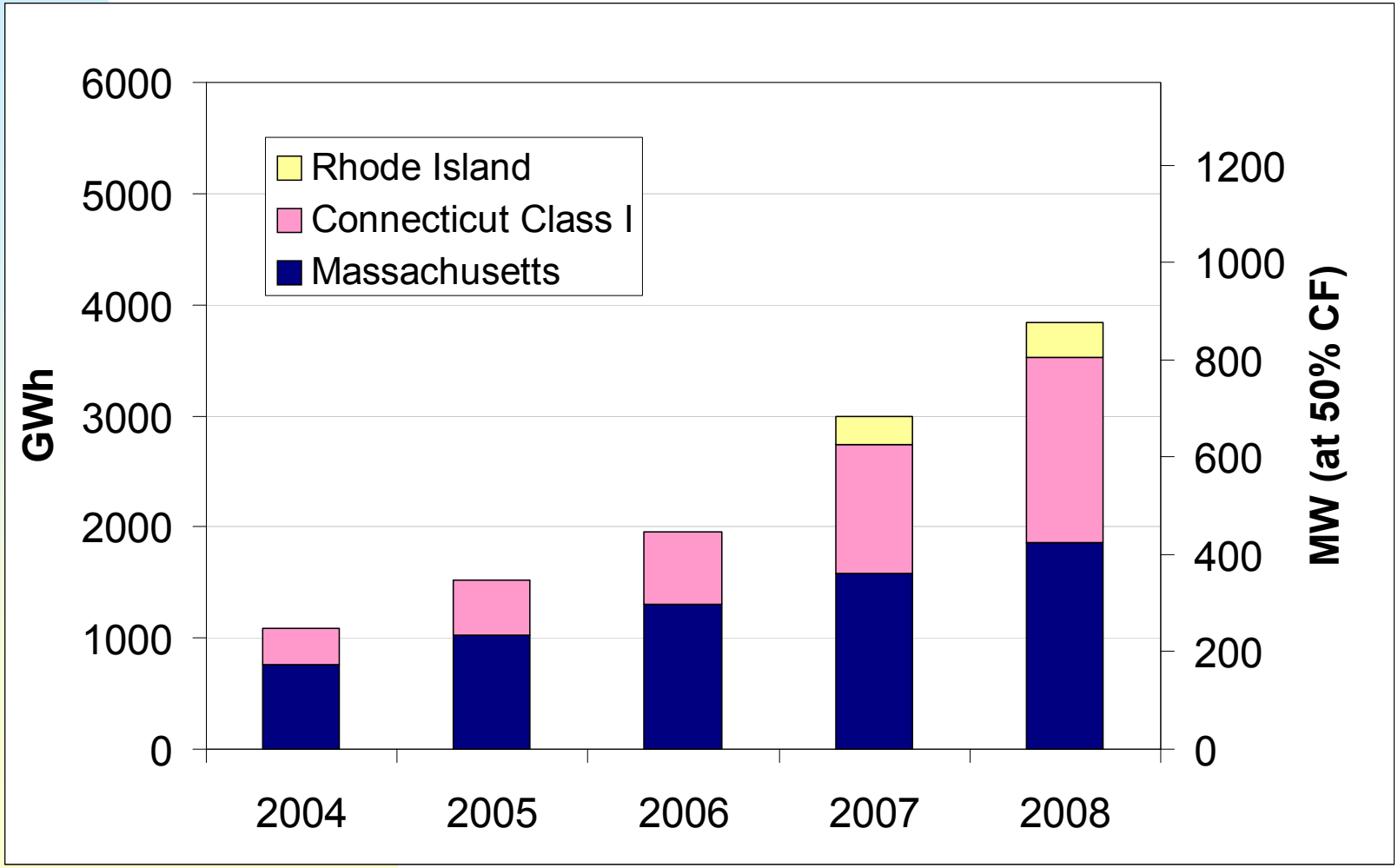
2003 New Renewable Generation by Fuel Type



2003 Renewable Generation by State



New England RPS (Class I) Demand

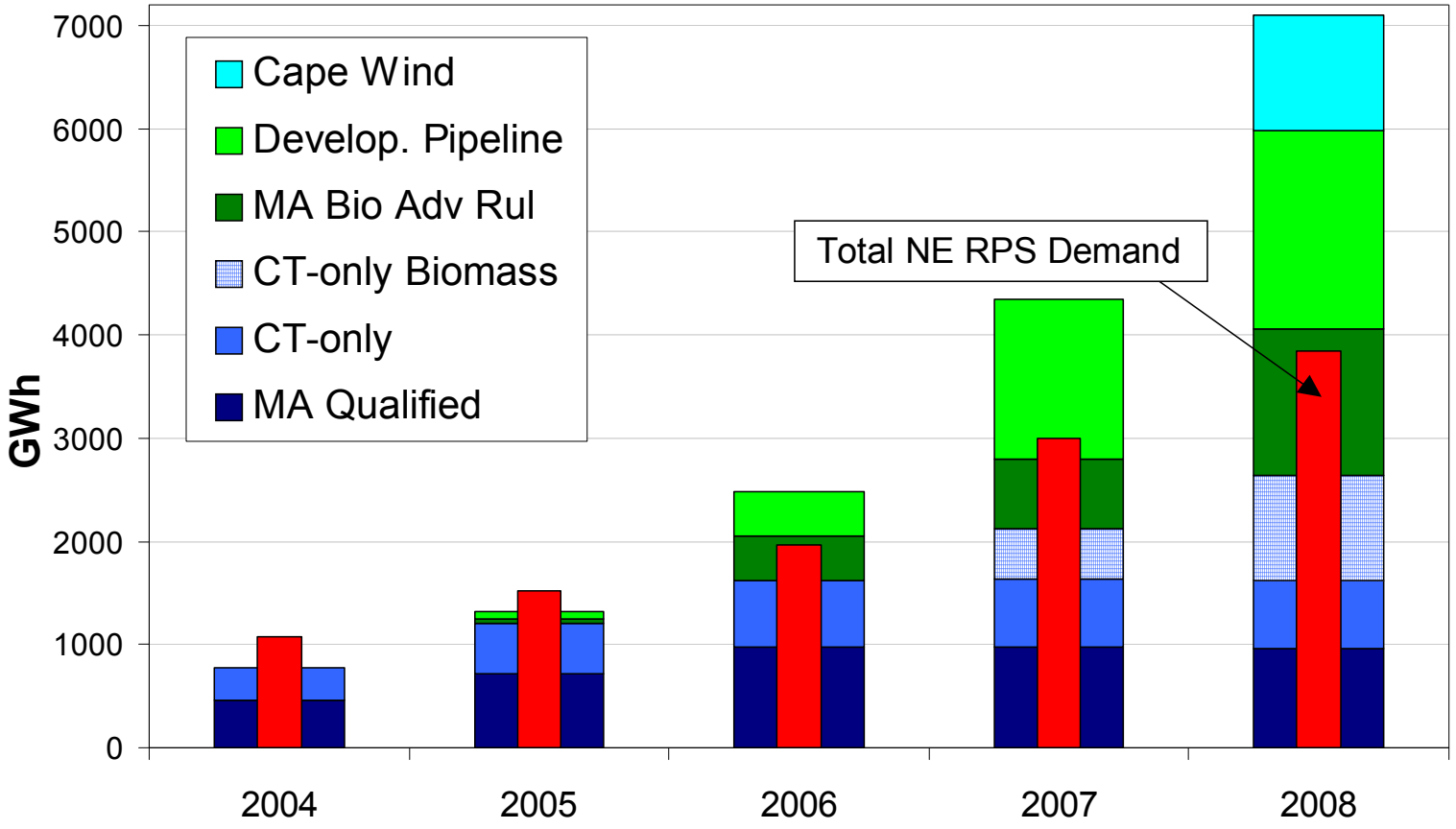


The Renewable Capacity Pipeline
Projects Current and Under Development

		Number of Projects	Total Capacity by 2008 MW	2008 Generation GWh
Currently Qualified Projects		**49**	**304**	**1477**
MA Qualified		**34**	**219**	**984**
	LFG	21	78	334
	Biomass	5	88	626
	Wind	3	34	0
	Other	5	18	24
CT-only Qualified		**15**	**85**	**493**
	LFG	10	23	121
	Fuel Cell	3	1	4
	Biomass	2	61	367
Projects in the Development Pipeline		**48**	**1589**	**6851**
CT-only Biomass	Biomass	**8**	**194**	**1273**
MA Bio. Adv Rulings	Biomass	**14**	**306**	**1421**
Non-Biomass Projects		**25**	**664**	**3039**
	LFG	8	31	238
	Wind	17	632	1685
Cape Wind	Wind	**1**	**425**	**1117**

REC Supply Projection:

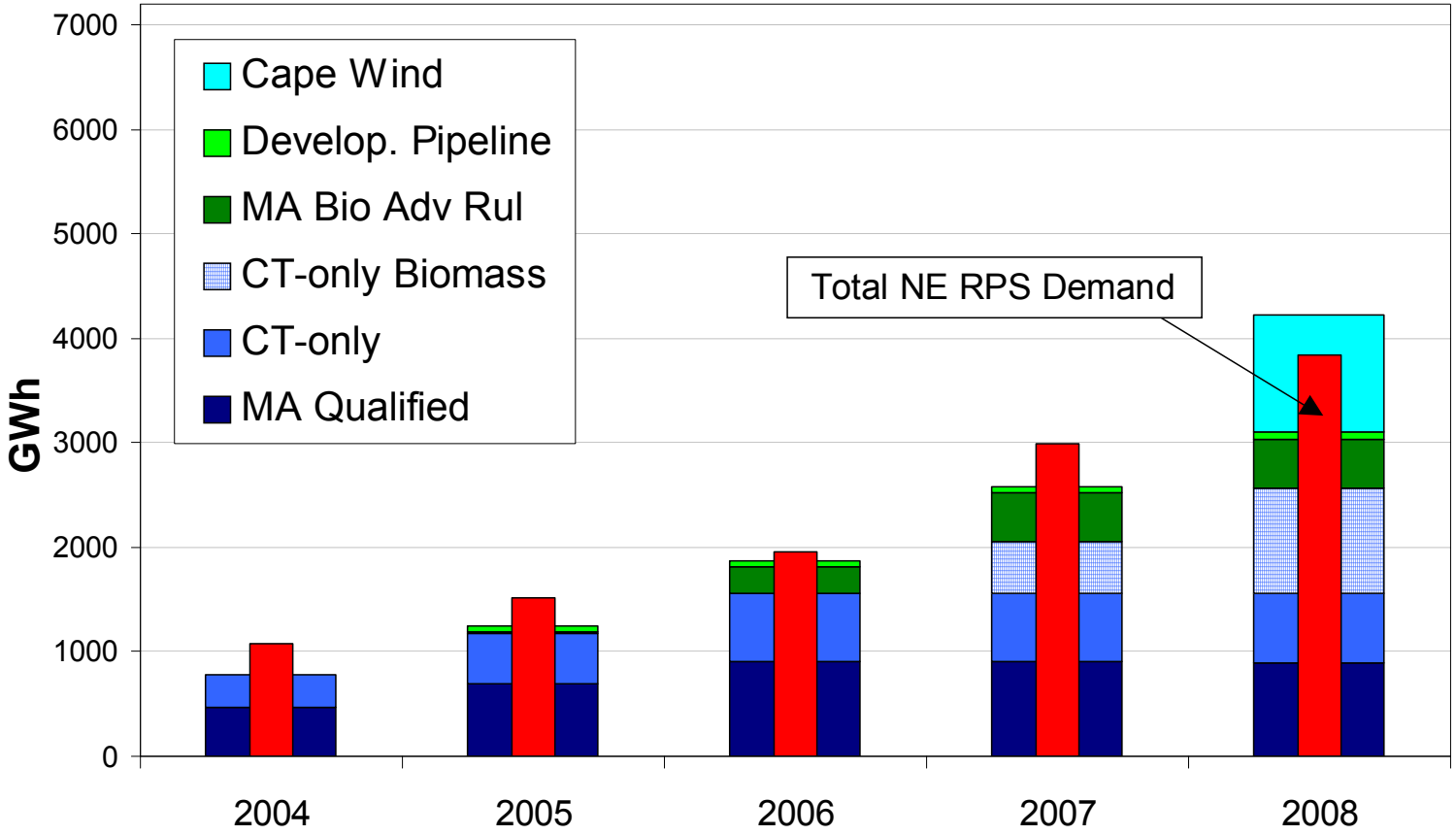
"Maximum Development" Scenario



Assumption: Projects currently qualified or identified in pipeline are developed on schedule.

REC Supply Projection:

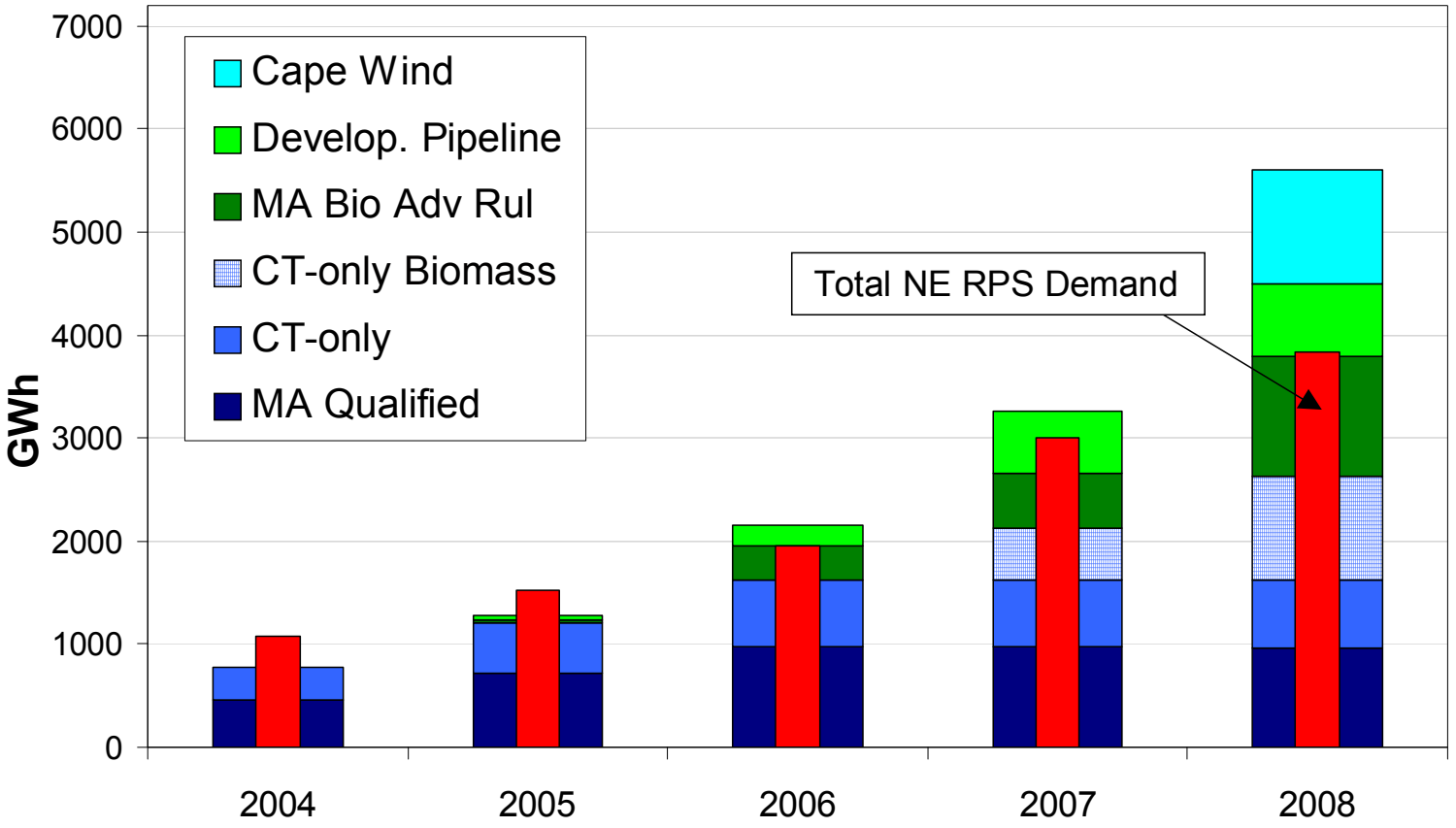
"Minimum Development" Scenario



Assumption: Significant development barriers are encountered.
no VT wind, no "greenfield" projects, no NY imports, project specific downgrades

REC Supply/Demand Balance

"Most Likely Development" Scenario



Assumption: Projected generation of each project is reduced by probability of development success. Probabilities depend on status of development, generally ranging from 0.25 (early development), .50 (site control, some permitting), to 0.85 (positive Advisory Ruling).

State Initiatives Foster Long Term REC Contracts

- **MRET Green Power Partnership**
  - Competitive solicitation for LT REC contracts
  - Round I: 100 MW's
  - Round II : 50 MW's
- **DOER's Proposed Use of 2004 ACP Revenues**
  - Add to MGPP Round II
  - Another 50 MW's
- **DOER's Proposed State Renewables Purchase**
  - $17M in long-term contracts for REC's
  - Long-term contracts for underlying electricity

Long-Term Financing for RE Development

- **Supply shortfall in the first years is to be expected**
  - Project development time will mean several years for supply to catch up with demand
- **High REC prices foster substantial development activities**
- **Stable RPS rules encourage investor confidence**
- **Over time, market forces should bring supply and demand into balance**
  - Long-term stability of RE prices can provide a valuable hedge against electricity prices set by use of natural gas
  - Market participants will seek to reduce compliance costs with long-term contracts
  - As overall NE reserve capacity tightens, financing of new capacity development projects will become easier